CLAIMS

1. A heat exchanger comprising:

a shell having an open end and a closed end and defining a shell cavity;

a steam inlet adjacent the closed end and communicating with the shell cavity to allow steam to enter the shell cavity; and

a flange coupled to the shell adjacent the open end, the flange having therein a first passageway communicating with the shell cavity for receiving a tube bundle, and a second passageway communicating with the shell cavity to allow condensate to drain from the shell cavity.

2. The heat exchanger of claim 1, wherein the second passageway is positioned in the flange to allow condensate to the drain from the shell cavity regardless of whether the heat exchanger is oriented vertically or horizontally.

3. The heat exchanger of claim 1, wherein the shell has a longitudinal axis and wherein the second passageway has a longitudinal axis that is oriented substantially normal to the longitudinal axis of the shell.

4. The heat exchanger of claim 1, further including an insulating jacket surrounding the shell.

5. The heat exchanger of claim 4, wherein the insulating jacket includes an insulating layer surrounding at least a portion of the shell and a shroud surrounding at least a portion of the insulating layer.

6. The heat exchanger of claim 5, wherein the shroud is stainless steel.

7. The heat exchanger of claim 1, wherein the flange further includes a seat portion adjacent the first passageway, the seat portion adapted to receive a face plate coupled to the tube bundle.

8. The heat exchanger of claim 7, further including a closure plate adapted to sandwich the face plate between the seat portion and the closure plate to substantially seal the open end of the shell.

9. A heat exchanger comprising:

a vessel defining a cavity and having an open end; and

a flange fixed to the vessel adjacent the open end, the flange including an annular wall having extending therethrough an axial passage registered with the open end of the vessel and communicating with the cavity, and the annular wall having extending therethrough a radial passage communicating with the axial passage.

10. A heat exchanger as set forth in claim 9 and further including a tube assembly fixed to the flange, the tube assembly including a tube bundle received by the axial passage and extending into the cavity and a face plate fixed to the flange and closing the axial passage.

11. A heat exchanger as set forth in claim 9 wherein the annular wall has extending therethrough a plurality of axially extending bolt holes surrounding the axial passage, and wherein the radial passage is located intermediate a pair of the plurality of bolt holes.

12. A heat exchanger as set forth in claim 9 wherein the open end of the vessel is located above the radial passage in the annular wall.

13. A heat exchanger comprising:

an elongated shell defining an interior cavity extending along an axis between a closed end and an open end spaced from the closed end, the shell defining a steam inlet communicating with the cavity, the steam inlet being adapted to be connected to a steam supply;

a shell flange fixed to the open end of the shell, the shell flange including a first passageway communicating with the open end, a second passageway having a longitudinal axis, and a reduced diameter seat portion, the longitudinal axis of the second passage being substantially normal to the longitudinal axis of the shell;

a tube assembly housed by the shell in the cavity, the assembly including a plurality of tubes and a face plate supporting the tubes and received in the seat portion of the shell flange; and

a closure plate fixed over the face plate, the shell flange, the face plate and the closure plate being fastened to seal the open end of the shell.